

KULLYSPELL ESTATES- SURFACE WATER INTAKE (PWS 1090053) SOURCE WATER ASSESSMENT REPORT

November 21, 2000



State of Idaho Department of Environmental Quality

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Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the watershed characteristics.

This report, *Source Water Assessment Kullyspell Estates- Surface Water Intake (1090053)*, describes the public drinking water system, the zone boundary of water contribution, and the associated potential contaminant sources located within this boundary. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The Kullyspell Estates drinking water system consists of one surface water intake and one backup well. The focus of this report will be the surface water intake only. No significant water quality problems have been identified. Occasionally, high levels of turbidity in Lake Pend Oreille will require increased amounts of disinfectant to assure proper water treatment. A slow sand filter and a disinfection system were recently installed to meet the requirements of the Surface Water Treatment Rule.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Kullyspell Estates should focus source water protection activities on implementation of practices aimed at minimizing the possibility of contaminant spills into waters upstream from the intake and protecting the intake from high levels of turbidity in the lake, especially in the spring. As most of the designated area is not owned by Kullyspell Estates, partnerships with state and local agencies and small business owners should be established and are critical to success. Due to the fairly short time associated with the movement of surface waters, source water protection activities should be aimed at short-term management strategies with the development of long-term management strategies to counter any future contamination threats.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies please contact your regional DEQ office or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR KULLYSPELL ESTATES- SURFACE WATER INTAKE

Section 1. Introduction- Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area, a map showing the entire watershed contributing to the delineated area and the inventory of significant potential sources of contamination identified within the delineated area are attached.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the intakes and watershed characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

Kullyspell Estates provides water to a seasonal community of approximately 26 people. The water system is located on the Hope Peninsula between Memaloose Island and Sheepherder Point on Lake Pend Oreille. (Figure 1). The Kullyspell Estates public drinking water system is comprised of one surface water intake and one backup well.

Defining the Zones of Contribution- Delineation

To protect surface water systems from potential contaminants, the EPA required that the entire drainage basin be delineated upstream from the intake to the hydrologic boundary of the drainage basin (U.S. EPA, 1997b). The EPA recognized that an intake on a large water body could have an extensive drainage basin. Therefore, the EPA recommended that large drainage basins be segmented into smaller areas for the purpose of implementing a cost-effective potential contaminant inventory and susceptibility analysis. The delineation process established the physical area around an intake that became the focal point of the assessment. The process included mapping the boundaries of the zone of contribution into a minimum buffer zone for lakes, which extends 500 ft. from the shoreline around the circumference of the lake. In addition to the buffer zone around the lake itself, creeks and rivers that discharge within the 500-ft. buffer will also have a buffer zone delineated. This buffer zone also extends from where the creek or river flows into the lake extend up tributaries to the remainder of the 25-mile boundary, or the 4-hour streamflow time-of-travel boundary, whichever is greater.

In addition to the source water delineation, DEQ has included a 24-hour emergency response delineation to facilitate emergency-response activities. If a potential contaminant spills directly into a water body, the drinking water utility needs appropriate notification in order to turn off an intake, or switch to an alternative source. For lakes, this process was not necessary, as the entire water surface area of the lake along with a 500' buffer around the lake will be included in the delineation.

The delineated source water assessment area for the Kullyspell Estates surface water intake can best be described encompassing the entire Lake Pend Oreille watershed, extending into the state of Montana. The actual data used by DEQ in determining the source water assessment delineation area are available upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of surface water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and from available databases.

The dominant land use in the area surrounding Kullyspell Estates is undeveloped with multiple seasonal and year round residences.

It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination. These involve educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply intake.

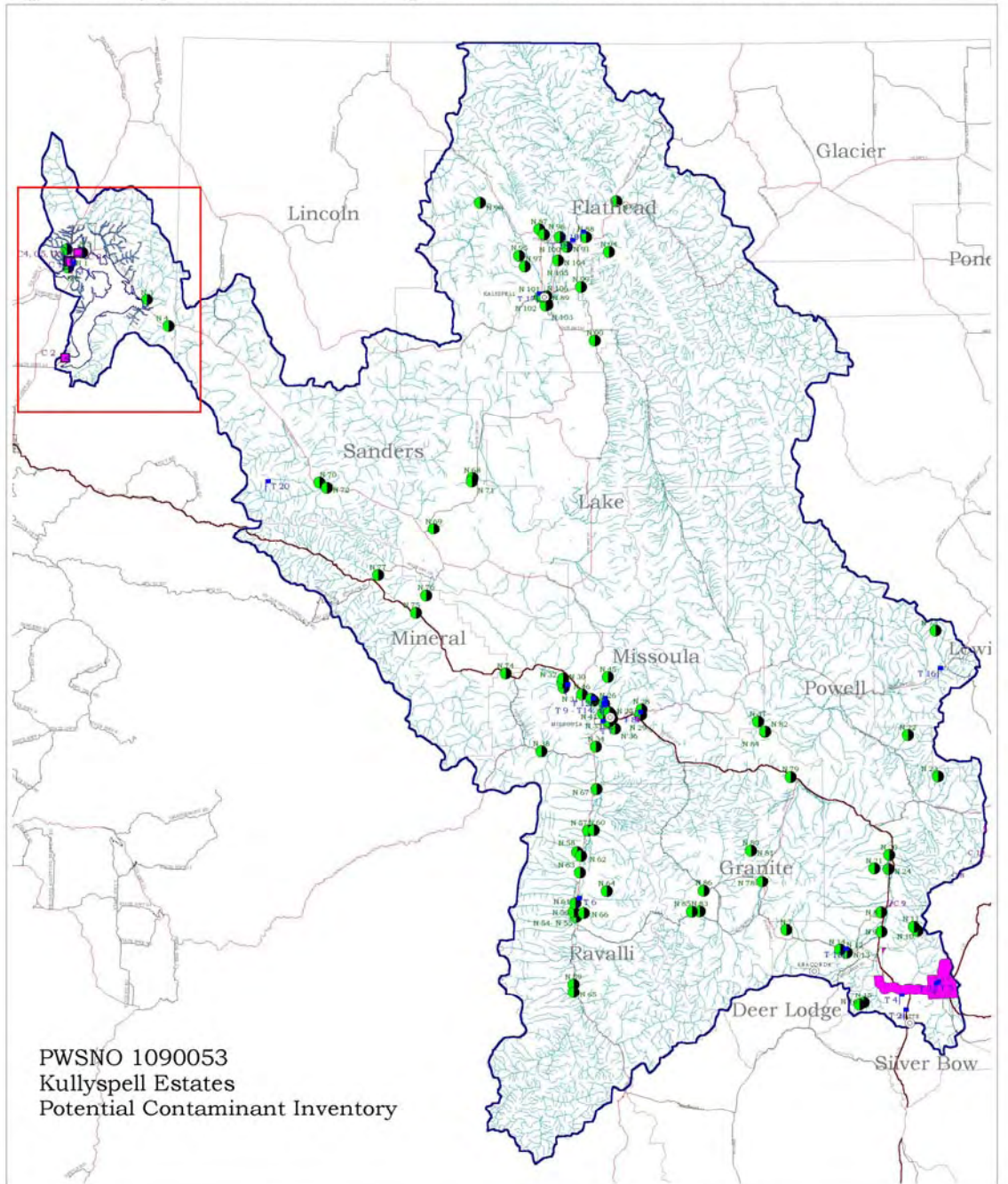
Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted during the summer of 2000. The first phase involved identifying and documenting potential contaminant sources within the Kullyspell Estates surface water intake source water assessment area through the use of computer databases and Geographic Information System (GIS) maps developed by DEQ. The second or enhanced phase of the contaminant inventory was voluntary and was not completed by Kullyspell Estates.

A total of 181 potential contaminant sites are located within the delineated source water area (see Table 1). Most of the potential contaminant sources in the immediate vicinity of the intake are located in and around the town of Hope, Idaho. Potential contaminant sources located in the delineated source water areas include underground fuel storage tanks, various businesses, National Pollution Discharge Elimination Sites, RCRIS Sites, mines, SARA sites, above ground fuel storage tanks and wastewater land application sites. Also included are sites identified during enhanced potential contaminant inventories completed by other public water systems located in the source water area. (Figure 1). The potential contaminant sources identified are located within the state of Idaho only. The source water assessment process did not inventory potential contaminant sources outside the state, except those identified as significant according to Idaho's Source Water Assessment Plan. (Figure 2). These include sites listed under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), National Pollution Discharge Elimination Sites (NPDES), and Toxic Release Inventory Sites within the delineated source water area. Significant potential contaminant sources located in the watershed but outside of the buffer zone are listed in Table 2.

Contaminants of concern are primarily related to small business operation. Table 1 summarizes the potential contaminants of concern and information source.

Figure 2. Kulyspell Estates. Location of Significant Potential Contaminant Sources in Watershed



0 25 50 75 100 125 150 175 200 Miles

Clark Fork Watershed

LEGEND

- | | | |
|--------------------|----------------------------------|-------------------------|
| Watershed Boundary | Roads | CERCLIS Site |
| Detail Maps | Primary road with limited access | NPDES Site |
| Cities and Towns | Primary road | Toxic Release Inventory |
| Rivers and Streams | Secondary and connecting road | |



DOVER Age 10/6/00
SAMB

Table 1. Kullyspell Estates- Surface Water Intake Potential Contaminant Inventory

SITE #	Source Description	Source of Information	Potential Contaminants
1	LUST	Database Search	VOC, SOC
2	LUST	Database Search	VOC, SOC
3	LUST	Database Search	VOC, SOC
4	LUST	Database Search	VOC, SOC
5	LUST	Database Search	VOC, SOC
6	LUST	Database Search	VOC, SOC
7	LUST	Database Search	VOC, SOC
8	LUST	Database Search	VOC, SOC
9	LUST	Database Search	VOC, SOC
10	LUST	Database Search	VOC, SOC
11	LUST	Database Search	VOC, SOC
12	LUST	Database Search	VOC, SOC
13	LUST	Database Search	VOC, SOC
14	LUST	Database Search	VOC, SOC
15	LUST	Database Search	VOC, SOC
16	LUST	Database Search	VOC, SOC
17	LUST	Database Search	VOC, SOC
18	UST	Database Search	VOC, SOC
19	UST	Database Search	VOC, SOC
20	UST	Database Search	VOC, SOC
21	UST	Database Search	VOC, SOC
22	UST	Database Search	VOC, SOC
23	UST	Database Search	VOC, SOC
24	UST	Database Search	VOC, SOC
25	UST	Database Search	VOC, SOC
26	UST	Database Search	VOC, SOC
27	UST	Database Search	VOC, SOC
28	UST	Database Search	VOC, SOC
29	UST	Database Search	VOC, SOC
30	UST	Database Search	VOC, SOC
31	UST	Database Search	VOC, SOC
32	UST	Database Search	VOC, SOC
33	UST	Database Search	VOC, SOC
34	UST	Database Search	VOC, SOC
35	UST	Database Search	VOC, SOC
36	UST	Database Search	VOC, SOC
37	UST	Database Search	VOC, SOC
38	UST	Database Search	VOC, SOC
39	UST	Database Search	VOC, SOC
40	UST	Database Search	VOC, SOC
41	UST	Database Search	VOC, SOC
42	UST	Database Search	VOC, SOC
43	UST	Database Search	VOC, SOC
44	UST	Database Search	VOC, SOC
45	UST	Database Search	VOC, SOC
46	UST	Database Search	VOC, SOC
47	UST	Database Search	VOC, SOC
48	UST	Database Search	VOC, SOC

SITE #	Source Description	Source of Information	Potential Contaminants
49	General Contractors	Database Search	VOC
50	Taxidermist	Database Search	VOC
51	Building Contractors	Database Search	VOC, SOC
52	Concrete Contractors	Database Search	VOC
53	Buildings: Pre-cut, Pre-fab	Database Search	VOC, SOC
54	Fish Hatchery	Database Search	Microbial
55	Roofing Contractor	Database Search	VOC
56	Veterinarian	Database Search	SOC
57	Auto Parts- Retail and Supply	Database Search	VOC
58	Service Station- Gas and Oil	Database Search	VOC, SOC
59	Storage- Household and Commercial	Database Search	VOC, SOC
60	Newspaper Publisher	Database Search	SOC, IOC
61	Grading Contractor	Database Search	VOC
62	Hospital	Database Search	VOC, Microbial
63	Veterinarian	Database Search	SOC
64	Cranes- Wholesale	Database Search	VOC
65	Railroad	Database Search	VOC, SOC
66	Oils, Fuel- Wholesale	Database Search	VOC, SOC
67	Hardware- Retail	Database Search	VOC, SOC, IOC
68	Concrete Contractor	Database Search	VOC
69	Marine Contractor	Database Search	VOC, SOC
70	Photographer- Commercial	Database Search	VOC, IOC
71	General Contractor	Database Search	VOC, SOC
72	County, Gov't Transportation Program	Database Search	VOC, IOC
73	Photographer- Portrait	Database Search	VOC, IOC
74	Water Treatment Equip Service and Supplies	Database Search	VOC, SOC
75	Marinas	Database Search	VOC, SOC
76	Tile, Ceramic Contractors/Dealers	Database Search	VOC, IOC
77	Screen Printing	Database Search	VOC, IOC
78	Service Stations- Gas, Oil	Database Search	VOC, SOC
79	Home Builders	Database Search	VOC, SOC
80	Candy and Confectionery- Manufacturer	Database Search	VOC, IOC
81	Photo Finishing- Retail	Database Search	VOC, IOC
82	Printers	Database Search	VOC, IOC
83	Lubricating Service- Mobile	Database Search	VOC, SOC
84	Hardware- Retail	Database Search	VOC, SOC, IOC
85	Storage- Household and Commercial	Database Search	VOC, SOC
86	Building Contractors	Database Search	VOC, SOC
87	Auto Parts and Supplies- Retail	Database Search	VOC
88	Bus Lines	Database Search	VOC, SOC
89	General Contractors	Database Search	VOC, SOC
90	Sign Manufacturer	Database Search	VOC, SOC, IOC
91	Brewers	Database Search	VOC, IOC
92	Cheese Processor	Database Search	VOC, IOC
93	Printers	Database Search	VOC, IOC
94	General Contractor	Database Search	VOC, SOC
95	Photographs- Stock	Database Search	VOC, IOC
96	Fire Department	Database Search	VOC, SOC
97	Excavating Contractors	Database Search	VOC

SITE #	Source Description	Source of Information	Potential Contaminants
98	Newspaper Publishers	Database Search	VOC, IOC
99	Boats- Excursion	Database Search	VOC, SOC
100	Auto Dealers- New Cars	Database Search	VOC, SOC
101	Truck Renting and Leasing	Database Search	VOC, SOC
102	General Contractors	Database Search	VOC, SOC
103	Photographers- Portrait	Database Search	VOC, IOC
104	Storage	Database Search	VOC, SOC
105	NPDES	Database Search	Microbial
106	NPDES	Database Search	Microbial
107	NPDES	Database Search	Microbial
108	RCRIS	Database Search	VOC, SOC
109	RCRIS	Database Search	VOC, SOC
110	Mine- Gold	Database Search	IOC
111	Mine- Sand and Gravel	Database Search	Sediment
112	Mine	Database Search	IOC
113	Mine- Lead	Database Search	IOC
114	Mine- Lead	Database Search	IOC
115	Mine- Lead	Database Search	IOC
116	Mine- Copper	Database Search	IOC
117	Mine- Lead	Database Search	IOC
118	Mine- Lead	Database Search	IOC
119	Mine	Database Search	IOC
120	Mine- Lead	Database Search	IOC
121	Mine	Database Search	IOC
122	Mine- Gold	Database Search	IOC
123	Mine	Database Search	IOC
124	Mine- Lead	Database Search	IOC
125	Mine- Silver	Database Search	IOC
126	Mine- Silver	Database Search	IOC
127	Mine	Database Search	IOC
128	Mine	Database Search	IOC
129	Mine- Lead	Database Search	IOC
130	Mine- Lead	Database Search	IOC
131	Mine- Silver	Database Search	IOC
132	Mine-Gold	Database Search	IOC
133	Mine- Copper	Database Search	IOC
134	Mine- Silver	Database Search	IOC
135	Mine	Database Search	IOC
136	Mine	Database Search	IOC
137	Mine	Database Search	IOC
138	Mine	Database Search	IOC
139	Mine- Copper	Database Search	IOC
140	Mine	Database Search	IOC
141	Mine- Clay	Database Search	Sediment
142	Mine- Zinc	Database Search	IOC
143	Mine- Lead	Database Search	IOC
144	Mine	Database Search	IOC
145	Mine	Database Search	IOC
146	Mine- Copper	Database Search	IOC

SITE #	Source Description	Source of Information	Potential Contaminants
147	Mine	Database Search	IOC
148	Mine- Limestone	Database Search	Sediment
149	SARA	Database Search	VOC, SOC
150	SARA	Database Search	VOC, SOC
151	SARA	Database Search	VOC, SOC, IOC
152	SARA	Database Search	VOC, SOC
153	SARA	Database Search	VOC, SOC
154	SARA	Database Search	VOC, SOC
155	SARA	Database Search	VOC, SOC
156	AST	Database Search	VOC, SOC
157	AST	Database Search	VOC, SOC
158	WLAP	Database Search	Microbial
159	WLAP	Database Search	Microbial
160	Septic Drainfield	Enhanced Inventory	Microbial
161	Main Rail Line	Enhanced Inventory	VOC, SOC
162	Hwy 200	Enhanced Inventory	VOC, SOC
163	Septic Drainfield	Enhanced Inventory	Microbial
164	Main Rail Line	Enhanced Inventory	VOC, SOC
165	Hwy 200	Enhanced Inventory	VOC, SOC
166	Forest Road	Enhanced Inventory	VOC, SOC
167	RV Park	Enhanced Inventory	VOC, SOC, Microbial
168	Clark Fork River	Enhanced Inventory	Microbial
169	Septic Tank	Enhanced Inventory	Microbial
170	Septic Tank	Enhanced Inventory	Microbial
171	Old Wellhead	Enhanced Inventory	Microbial
172	Septic Tank	Enhanced Inventory	Microbial
173	Septic Tank	Enhanced Inventory	Microbial
174	Gray Water Tank	Enhanced Inventory	Microbial
175	Septic Tank	Enhanced Inventory	Microbial
176	AST	Enhanced Inventory	VOC, SOC
177	Public Restrooms	Enhanced Inventory	Microbial
178	Vault Toilet	Enhanced Inventory	Microbial
179	Vault Toilet	Enhanced Inventory	Microbial
180	Landslide	Enhanced Inventory	Sediment
181	Lagoon	Enhanced Inventory	Microbial

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Table 2. Significant Potential Contaminant Sites in Watershed

Table 2a. CERCLA Sites

SITE #	Source Description	Source of Information	Potential Contaminants
C 1	Wood Treatment	Database Search	IOC, SOC
C 2	Government	Database Search	VOC, SOC
C 3	Mining Sediment	Database Search	IOC, Turbidity
C 4	Industrial	Database Search	VOC, SOC
C 5	Industrial	Database Search	VOC, SOC
C 6	Wood Treatment	Database Search	IOC, SOC
C 7	Mine	Database Search	IOC

SITE #	Source Description	Source of Information	Potential Contaminants
C 8	Mine	Database Search	IOC
C 9	Mine	Database Search	IOC
C 10	Mine	Database Search	IOC
C 11	Mining Sediment	Database Search	IOC, Turbidity
C 12	Wood Treatment	Database Search	IOC, SOC
C 13	Mine	Database Search	IOC

Table 2b. NPDES Sites

SITE #	Source Description	Source of Information	Potential Contaminants
N 1	Stormwater	Database Search	IOC, VOC, SOC
N 2	Stormwater	Database Search	IOC, VOC, SOC
N 3	Aquaculture	Database Search	Microbial
N 4	Aquaculture	Database Search	Microbial
N 5	Sewage Lagoon	Database Search	Microbial
N 6	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 7	Placer Mine Settling Ponds	Database Search	IOC, VOC, SOC, Microbial
N 8	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 9	Facultative Sewage Lagoon	Database Search	Microbial
N 10	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 11	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 12	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 13	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 14	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 15	Mining Area Drainage	Database Search	IOC
N 16	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 17	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 18	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 19	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 20	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 21	Feedlots	Database Search	Microbial
N 22	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 23	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 24	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 25	Total Discharge To River	Database Search	IOC, VOC, SOC
N 26	Non-Contact Heat Exchanger	Database Search	IOC, VOC, SOC
N 27	Settling Pond Effluent	Database Search	IOC, SOC
N 28	Trickling Filter Effluent	Database Search	IOC, SOC
N 29	Activated Sludge Effluent	Database Search	IOC, SOC
N 30	Stone Sediment	Database Search	Turbidity
N 31	Stone Sediment	Database Search	Turbidity
N 32	Stone Sediment	Database Search	Turbidity
N 33	Uncontaminated Cooling Water	Database Search	IOC, VOC, SOC
N 34	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 35	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 36	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 37	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC

SITE #	Source Description	Source of Information	Potential Contaminants
N 38	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 39	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 40	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 41	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 42	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 43	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 44	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 45	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 46	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 47	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 48	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 49	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 50	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 51	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 52	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 53	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 54	Boiler Blowdown and Cooling Water	Database Search	IOC, VOC, SOC
N 55	Noncontact Cooling Water	Database Search	IOC, VOC, SOC
N 56	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 57	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 58	Feedlots	Database Search	Microbial
N 59	Facultative Sewage Lagoon	Database Search	Microbial
N 60	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 61	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 62	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 63	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 64	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 65	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 66	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 67	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 68	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 69	Lagoon, Without Significant Industry	Database Search	Microbial
N 70	Lagoon, Without Significant Industry	Database Search	Microbial
N 71	Lagoon, Without Significant Industry	Database Search	Microbial
N 72	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 73	Talc Mine	Database Search	Turbidity
N 74	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 75	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 76	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 77	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 78	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 79	Facultative Sewage Lagoon	Database Search	Microbial
N 80	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 81	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 82	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 83	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 84	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC

SITE #	Source Description	Source of Information	Potential Contaminants
N 85	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 86	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 87	Railroad	Database Search	VOC, SOC
N 88	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 89	Noncontact Cooling Water	Database Search	IOC, VOC, SOC
N 90	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 91	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 92	Water Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 93	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 94	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 95	Water Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 96	Wastewater Treatment Plant	Database Search	IOC, VOC, SOC, Microbial
N 97	Feedlots	Database Search	Microbial
N 98	Facultative Sewage Lagoon	Database Search	Microbial
N 99	Storm Water - Mining, Oil and Gas	Database Search	IOC, VOC, SOC
N 100	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 101	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 102	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 103	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 104	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 105	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 106	Storm Water - Industrial	Database Search	IOC, VOC, SOC
N 107	Storm Water - Industrial	Database Search	IOC, VOC, SOC

Table 2c. Toxic Release Inventory Sites

SITE #	Source Description	Source of Information	Potential Contaminants
T1	Industrial	Database Search	IOC, VOC, SOC
T 2	Industrial	Database Search	IOC, VOC, SOC
T 3	Concrete and Fuel	Database Search	VOC, IOC, SOC
T 4	Silicon	Database Search	VOC, IOC, SOC
T 5	Industrial	Database Search	IOC, VOC, SOC
T 6	Chemical	Database Search	IOC, VOC, SOC
T 7	Industrial	Database Search	IOC, VOC, SOC
T 8	Textile	Database Search	VOC
T 9	Industrial	Database Search	IOC, VOC, SOC
T 10	Chemical	Database Search	IOC, VOC, SOC
T 11	Wood Products	Database Search	IOC, SOC
T 12	Air Base	Database Search	VOC, SOC
T 13	Stone	Database Search	IOC, Turbidity
T 14	Industrial	Database Search	IOC, VOC, SOC
T 15	Industrial	Database Search	IOC, VOC, SOC
T 16	Wood Products	Database Search	IOC, SOC
T 17	Wood Products	Database Search	IOC, SOC
T 18	Wood Products	Database Search	IOC, SOC
T 19	Aluminum	Database Search	IOC, VOC, SOC
T 20	Mining	Database Search	IOC

Section 3. Susceptibility Analysis

Significant potential sources of contamination were ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity and construction of the intake, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each intake is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Intake Construction

The construction of the Kullyspell Estates public water system intake directly affects the ability of the intake to protect the source from contaminants. The Kullyspell Estates drinking water system consists of one intake that produces surface water for domestic use. Water production is monitored and managed the system operator. The intake system construction score was moderate, reflecting a properly built intake that does not have the added protection of an infiltration gallery.

The Kullyspell Estates intake is located just off the Hope Peninsula between Memaloose Island and Shepherder Point on Lake Pend Oreille.

Potential Contaminant Source and Land Use

The intake rated in the moderate category for the inorganic chemical class, volatile organic chemicals, and synthetic organic chemicals. This reflects the size of the watershed and the number of contaminant sources present within it.

In terms of the total susceptibility score, it can be seen from Table 3 that the intake showed a moderate susceptibility for microbial contamination, which is generally related to storm water runoff and a high density of individual septic systems in an area.

Table 3. Summary of Kullyspell Estates- Surface Water Intake Susceptibility Evaluation

Intake	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
	IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Surface Water	M	M	M	M	M	M	M	M	M

H = High Susceptibility, M = Moderate Susceptibility, Low Susceptibility

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

H* - Indicates source automatically scored as high susceptibility due to presence of either a VOC, SOC or an IOC above the Maximum Contaminant Level in the finished drinking water.

Susceptibility Summary

The Kullyspell Estates surface water intake is moderately susceptible to all types of contamination due to its location on a large surface water body.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies. Kullyspell Estates should focus source water protection activities on implementation of practices aimed at reducing the possibility of a contaminant spill upstream from the intake and minimizing the impacts of turbidity that occurs in Lake Pend Oreille, especially in the spring. Most of the delineated area is not owned by Kullyspell Estates. Partnerships with state and local agencies, small business owners and possibly other public water systems drawing from Lake Pend Oreille should be established and are critical to success. Due to the relatively short time involved with the movement of surface water, source water protection activities should be aimed at short-term management strategies with an emphasis on dealing with long-term future impacts from these same sources.

Assistance

Public water suppliers and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State DEQ Office (208) 373-0502

Website: <http://www2.state.id.us/deq>

Potential Contaminant Source / Land Use Worksheet

1	Land Use or Cover (Pick the Predominant Land Use Type)	IOC Score	VOC Score	SOC Score	Microbial Score	Comments		
1	Basalt Flow, Undeveloped, Other	0	0	0	0			
2	Is Farm Chemical Use High?	Step: Go Directly to Step 3						
2a	Indicate the appropriate chemical category	0	0	0	0			
3	Do significant contaminants sources exist within 500' of the source water and within 1000' of the intake, or are any sources suspended above the surface of the source water?							
4	Sources of Class II or III Contaminants or Microbiols	IOC Score	VOC Score	SOC Score	Microbial Score	Comments		
	(List Sources with up to a Maximum of Four per Category)	# IOC Sources	4	0	0	0	0	
		# VOC Sources	4					
		# SOC Sources	4					
		# Microbial Sources	4					
5	Are there agricultural lands within 500' of the source water intake and the 4-hour time of travel based on 10-year flood flow records?	Step: Go to Step 6						
5a	Input the Percentage of Agricultural Lands	>50% Non-Irrigated Agriculture	0	0	0	0		
6	Are there three or more contaminant sources elsewhere in the delineated source water area?	1	1	1	1			
6a	Check the appropriate contaminant sources	TRUE	TRUE	TRUE	TRUE			
7	Are there sources of turbidity in the watershed such as road building or other construction activities which could affect the source water intake?	0	0	0	0			

Potential Contaminant Source / Land Use Score

Potential Contaminant Source / Land Use Rating = Moderate IOC Source Ranking (Score 6 to 12)
Moderate VOC Source Ranking (Score 6 to 12)
Moderate SOC Source Ranking (Score 6 to 12)
Moderate Microbial Source Ranking (Score 6 to 12)

Potential Contaminant Source / Land Use Worksheet

Land Use or Cover (Pick the Predominant Land Use Type)	IOC Score	VOC Score	SOC Score	Microbial Score	Comments	
Basalt Flow, Undeveloped, Other	0	0	0	0		
Is Farm Chemical Use High?	Step: Go Directly to Step 3					
Indicate the appropriate chemical category	0	0	0	0		
Do significant contaminants sources exist within 500' of the source water and within 1000' of the intake, or are any sources suspended above the surface of the source water?						
Sources of Class II or III Contaminants or Microbiols	IOC Score	VOC Score	SOC Score	Microbial Score	Comments	
(List Sources with up to a Maximum of Four per Category)	# IOC Sources	4	0	0	0	0
	# VOC Sources	4				
	# SOC Sources	4				
	# Microbial Sources	4				
Are there agricultural lands within 500' of the source water intake and the 4-hour time of travel based on 10-year flood flow records?	Step: Go to Step 6					
Input the Percentage of Agricultural Lands	>50% Non-Irrigated Agriculture	0	0	0	0	
Are there three or more contaminant sources elsewhere in the delineated source water area?	1	1	1	1		
Check the appropriate contaminant sources	TRUE	TRUE	TRUE	TRUE		
Are there sources of turbidity in the watershed such as road building or other construction activities which could affect the source water intake?	0	0	0	0		

Potential Contaminant Source / Land Use Score

Potential Contaminant Source / Land Use Rating = Moderate IOC Source Ranking (Score 6 to 12)
Moderate VOC Source Ranking (Score 6 to 12)
Moderate SOC Source Ranking (Score 6 to 12)
Moderate Microbial Source Ranking (Score 6 to 12)

4
Urban / Commercial

Irrigated Cropland

Irrigated Pasture or Dryland Aq

Basalt Flow, Undeveloped, Other

2 FALSE FALSE FALSE

FALSE FALSE

2

2

1

3

Intake and the 4-hour TDT present within a 1-mile radius and upstream of the intake and within the minimum 500' buffer zone? present within the small stream segment of the delineation is part of the watershed boundary? not present.

2

0

1

TRUE TRUE TRUE TRUE

2

6
<25% Irrigated Agriculture
<25% Non-Irrigated Agriculture

25 to 50% Irrigated Agriculture
25 to 50% Non-Irrigated Agriculture
>50% Irrigated Agriculture
>50% Non-Irrigated Agriculture
No Agricultural Lands within this Zone

The final scores for the susceptibility analysis were determined from the addition of the Potential Contaminant Source/Land Use Score and Source Construction Score.

Final Susceptibility Scoring:

0 - 7 Low Susceptibility

8 - 15 Moderate Susceptibility

> 16 High Susceptibility